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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,971	12/31/2001	Tommy Kristensen Bysted	1076.41043X00	5442
20457	7590	08/13/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			TORRES, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,971

Applicant(s)

BYSTED ET AL.

Examiner

Joseph D. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: '401' on page 7. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: '414' of Figures 8 and 10. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled

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"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ylitalo et al. (WO 00/16494, hereafter referred to as Ylitalo).

35 U.S.C. 102(b) rejection of claim 1.

Ylitalo teaches a radio transmitting device comprising radio transmitter circuitry and processing means for processing digital signals to produce a modulating signal for the radio transmitter circuitry (UTRAN in Figure 1B is a radio transmitting device comprising radio transmitter circuitry TRX1-TRXN 116 and processing means MUX 114 for processing digital signals to produce a modulating signal for the radio transmitter circuitry), wherein the processing means is configured to implement a protocol stack having a physical layer and a medium access control layer, above the physical layer, providing a plurality of transport channels which are combined to produce said

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modulating signal (lines 23-33 on page 9 of Ylitalo teaches that the radio transmitter in Ylitalo is implemented in the Open Systems Interconnection OSI architecture, which is means for implementing a protocol stack having a physical layer and a medium access control layer, above the physical layer, providing a plurality of transport channels which are combined to produce said modulating signal), each transport channel being provided with a respective interleaving process (Figure 2A in Ylitalo teaches that after each transport channel is channel coded, it is then provided with a respective interleaving processes 204A and 204B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ylitalo et al. (WO 00/16494, hereafter referred to as Ylitalo) in view of Ross; Daniel P. (US 4901319 A).

35 U.S.C. 103(a) rejection of claims 2 and 3.

Ylitalo substantially teaches the claimed invention described in claim 1 (as rejected above).

However Ylitalo does not explicitly teach the specific use of an adaptive interleaving scheme. Note: Ylitalo teaches separate interleavers for each channel to overcome burst errors in fading channels (lines 1-8 on page 7 of Ylitalo).

Ross, in an analogous art, teaches an adaptive interleaving scheme whereby and interleaver is specifically configured to fading characteristics in a channel in order to overcome burst errors in fading channels (see Abstract in Ross).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ylitalo with the teachings of Ross by including use of an adaptive interleaving scheme. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of an adaptive interleaving scheme would have provided the opportunity to configure interleavers to fading characteristics in a channel in order to overcome burst errors the fading channel (see Abstract in Ross).

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4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ylitalo et al. (WO 00/16494, hereafter referred to as Ylitalo) in view of Ross; Daniel P. (ETSI TS 125 212 V3.1.1 [2000-01], Universal Mobile Telecommunications System [UMTS]; Multiplexing and channel coding [FDD]; [3G TS 25.212 version 3.1.1 Release 1999], hereafter referred to as ETSI TS 125 212 V3.1.1 Technical Reference).

35 U.S.C. 103(a) rejection of claim 4.

Ylitalo substantially teaches the claimed invention described in claim 1 (as rejected above). In addition, lines 28-34 on page 5 of Ylitalo teach the use of CRC for each channel.

However Ylitalo does not explicitly teach the specific use of rate matching.

The ETSI TS 125 212 V3.1.1 Technical Reference, in an analogous art, teaches the specific use of rate matching (see Rate Matching Blocks in Figure 1 on page 9 of the ETSI TS 125 212 V3.1.1 Technical Reference).

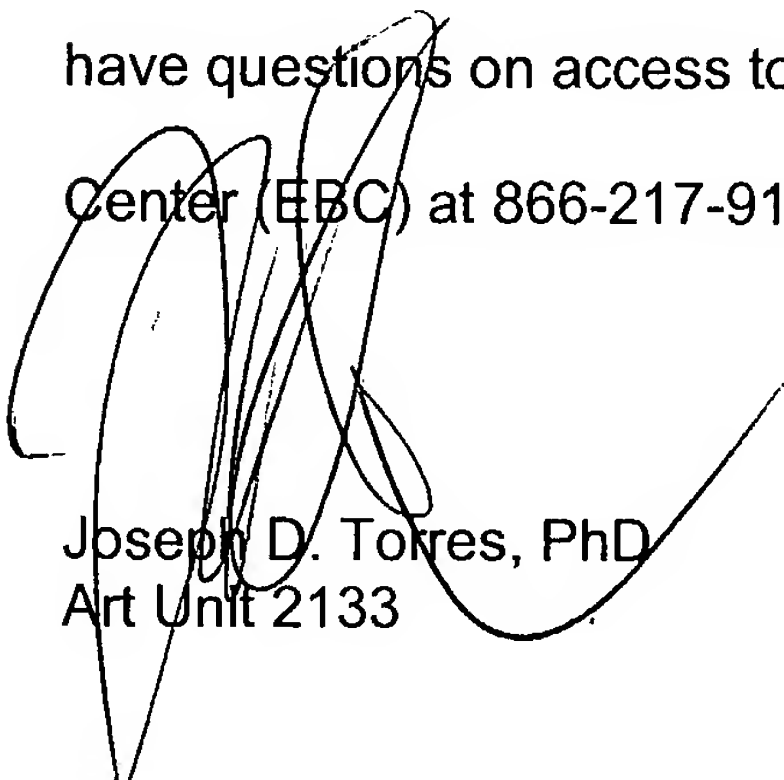
Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ylitalo with the teachings of the ETSI TS 125 212 V3.1.1 Technical Reference by including specific use of rate matching. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that specific use of rate matching would have provided the opportunity to maintain compliance with common standards such as the ETSI TS 125 212 V3.1.1 Technical Specification.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
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